

REPORT CONCERNING THE BILLING PRACTICES OF
PUBLIC UTILITIES PROVIDING GAS SERVICE TO
CONSUMERS IN ILLINOIS

ILLINOIS COMMERCE COMMISSION

September 2001

House Resolution 102 of the 92nd General Assembly urges the Illinois Commerce Commission (Commission) to provide to the General Assembly a report concerning the billing practices of public utilities providing gas service to consumers in Illinois.

Pursuant to HR 102, this report contains information pertaining to the guidelines that govern the practice of using estimates in issuing utility bills, the methodologies used by utilities in estimating usage, and standards for accuracy of metering devices. Also included is information regarding public forums held by the Commission.

UTILTIY BILLS BASED UPON ESTIMATES

The Public Utilities Act and Commission Rules

Section 8-303 of the Public Utilities Act contains language regarding estimated bills. *In order to enable the customer to ascertain whether the level of consumption is greater than the amounts billed in other billing periods and to eliminate to the fullest extent practicable consecutive estimated bills, the public utility shall make an actual meter reading at least every second billing period. If a meter reader is unable to gain access to the meter for the purpose of making an actual reading the public utility shall take other appropriate and reasonable measures to read the meter.*

There are Commission rules pertaining to estimated billing and dispute procedures as well. Section 280.80, of 83 Illinois Administrative Code 280 sets forth rules for estimated bills. Utilities are required to make an actual meter reading at least every second billing period and no utility may consecutively

estimate a customer's bill unless the procedure used by the utility to calculate estimated bills has been approved by the Commission and the word "estimate" appears on the bill.

This Commission rule allows the utility to render an estimated bill for any period in which: the utility has taken appropriate and reasonable measures to read the meter, including but not limited to, making an appointment with the customer, scheduling readings for times other than normal business hours; and/or providing post cards on which the customer may record the reading and mail it to the utility; or the customer has knowingly and willfully denied reasonable access to the utility's representative for the purpose of taking an actual reading of the meter; or the customer has otherwise made an actual reading of the meter unnecessarily difficult; or circumstances beyond the control of the utility make an actual reading of the meter extremely difficult.

Commission rules also set forth procedures that utility customers can use when disputes arise. Section 280.160 describes procedures which must be followed by utilities in addressing customer complaints and Section 280.170 of 83 Illinois Administrative Code 280 describes Commission complaint dispute procedures. These procedures are available to customers who are unable to resolve disputes with their utilities.

Utility Practices

Commission staff asked the utilities to provide information about their estimating practices. Companies furnished data about why, when and how often meter readings were estimated. Utilities were asked to provide their current methodology for estimating usage. Utilities also provided information regarding quality control procedures in place to assure the accuracy of bills that are based upon estimated consumption.

In addition, to learn about the accuracy of meter readings, staff asked utilities to provide information about meter reading that included the functions performed by the readers and the training they received. The results of this inquiry are summarized below.

Meter Reading

Each company has initial and ongoing training for their meter readers. The training includes how to read a meter, use of equipment, customer sensitivity, and safety (both the reader's personal safety and recognizing dangers such as gas leaks). When meter reading functions are outsourced, readers are held to the same standards as utility personnel.

Most meter readers use handheld devices which display and store information. Typically, the unit is a handheld computer with keypad. Some utilities also use optical probes or proximity radio frequency devices to collect meter readings. Where the reader is able to see the meter but unable to gain access, telescopes and binoculars may be used to obtain readings. In some cases customers supply keys to the utility for use by meter readers.

Customer information (notes pertaining to special instructions, hazards, meter change, type of service, previous reading) appears on the screen of the handheld device. The meter reader inputs the reading, the unit accepts the read, and information for the next customer on the route appears. When a meter reader enters a reading into the handheld device, the system performs an automatic check of the high/low range. The high/low range compares the reading entered with prior meter readings. An alarm goes off if a reading is entered resulting in usage outside of the parameters allowed within the range. The reader must reenter the required information.

Utilities have performance standards to measure the accuracy and efficiency of their meter readers. Meter production reports provide supervisors with information to assist in evaluating the performance of meter readers.

Estimated Readings

Meter readings are estimated because access to the meter is not available or access is denied by the customer (fences, dogs, etc.); inclement weather interferes with meter reading activity; or illness or injury temporarily reduces the number of meter readers available.

Utilities provided the number of meters that had been estimated for more than 12 months. The numbers reported by most utilities indicated that with very few exceptions, meters were read at least once a year. Nicor and Peoples Gas/North Shore Gas both reported several thousand customer meters not having been read for periods of in excess of 12 months. Both utilities are expected to take the necessary steps to reduce the number of meter readings that are continually being estimated, and to explain why they are unable to obtain meter readings.

Estimated Billing

Most estimates are generated by the utility's billing system according to the estimating methodology discussed later in this report. Utilities also calculate estimates manually.

Utilities have quality assurance procedures to ensure that actual as well as estimated usage data are accurately transmitted to the billing system. Readings obtained through handheld devices are monitored daily to ensure that data is transferred to the billing system each night.

Certain conditions trigger a review of bills. Tolerance levels are built into the utility's billing system that review and reject bills that exceed established parameters. The parameters are set for usage and demand by rate classification. Other examples of conditions that would cause review or rejection of a bill, include zero usage, missing information, extreme usage as compared to the prior month, and negative usage.

Utilities have quality control measures in their billing systems; following is an example. A complex set of parameter driven tables makes up the billing system. Parameters are defined for each rate and billing option available to customer. If an account fails any of the defined parameters, the billing is suspended and sent to the billing services department for review and /or approval. This process is called pre-bill. Each day, the system goes through two test bill situations where sample bills from each customer class are reviewed for accuracy. If correct, the rest of the customer bills are issued.

Billing Disputes

Commission rules require that utilities make personnel available during business hours to hear customer complaints and that such personnel is authorized to act on behalf of the company to resolve disputes. Utilities train customer service representatives to recognize and address individual customer inquiries and complaints resulting from utility errors and lack of customer understanding. This is the point at which the utility has the responsibility and the opportunity to determine why the customer's bill is abnormal. In instances where the utility cannot satisfactorily explain or resolve the customer's problem, the utility advises the customer of the informal complaint process available at the Commission.

Staff encourages utilities to recognize the importance of trained customer service representatives whose skills are consistent with the nature of the difficult job they perform. Staff also encourages utilities to explore methods for identifying underlying problems based upon complaints reported by individual customers.

Abnormally high bills can occur for a number of reasons. Quality control checks performed by the utility billing systems and manually detect most problems and prevent erroneous bills from being issued. However, errors can occur. It is important to determine whether those bills are high as the result of errors or if they are in fact accurate. When a customer contacts the utility with a high bill complaint, it is the responsibility of the utility to take the complaint seriously and investigate the complaint. Utilities must make available to customers personnel whose skills are consistent with the nature of the difficult job they perform. Utilities should explore methods for identifying underlying problems based upon complaints reported by individual customers. In other words, learn from individual complaints.

METHODOLOGIES USED BY GAS UTILITIES IN ESTIMATING USAGE

Commission Staff Study

The Staff performed a study of estimation methods.¹ Prior to the discussion of staff's study, it should be noted that estimation methods cannot and need not be flawless. Eventually, each customer's meter is going to be read. At that point, the sum of usage since the previous actual meter reading will be known, placing a limit on how much customers can be over billed or under billed in the long run. If a customer is over or under billed due to an inaccurate estimate, once an actual meter read is made, the customer's bill is adjusted to reflect the correct usage.

To perform the study, staff chose to use samples of actual billing data and measure the extent to which estimates deviated from actual metered usage. Staff decided to limit the scope of this study to the larger gas utilities: Ameren, Central Illinois Light Company, Illinois Power Company, Northern Illinois Gas Company, and Peoples Gas Light and Coke Company. Each of these companies was asked through a data request to provide a detailed description of their estimation methodologies and a sample of customer usage data with which the staff would measure the accuracy of these methods.

The data samples were to include at least two years of billing records for at least 200 customers. Staff would write computer programs to essentially replicate the utilities' estimation methods and to compare the estimates to the "actual" usage derived through meter reads. The difference between the estimate and the actual usage for any given customer and billing period is the error. To judge the accuracy of the various estimation methods, staff attempted to characterize the magnitude and direction (plus or minus) of the errors generated by these methods. In addition to examining the accuracy of the utilities' methods, staff created several straw man methods for comparison purposes.

¹ A more complete summary of the Staff study is provided as Appendix 1.

The table, below, shows how the various methods compare in terms of accuracy. Within this table, there are five threshold levels of error (plus or minus 10%, 15%, 20%, 30%, and 50%). Using the data samples of actual billing histories from the various utilities, and the various estimation methods, discussed above, the table shows the percentage of observed errors that were within each of these five threshold levels. The results for Staff's straw man models are shown as ranges because they were employed in each of the data samples, while each of the utility models was employed just with that utility's data sample.

Error Tolerance Levels	Illinois Power Method	Peoples Method	NI-Gas Method	CILCO Methods			Staff's Straw Man Methods			
				Year-ago Method	Month-ago Method	Year-ago, if data available, else Month-ago Method	Method 2: Month-Ago	Method 3: Year-Ago	Method 4: Last 12 Months	Method 5: Regression with remaining data available in sample
+/- 10%	32%	31%	55%	32%	10%	20%	37-44%	34-46%	36-50%	35-47%
+/- 15%	43%	44%	69%	44%	14%	28%	49-58%	48-61%	49-64%	47-60%
+/- 20%	51%	53%	78%	56%	18%	36%	57-66%	58-71%	59-74%	56-69%
+/- 30%	63%	65%	87%	73%	28%	48%	69-77%	69-82%	71-85%	68-81%
+/- 50%	79%	78%	94%	87%	55%	71%	83-89%	83-92%	84-94%	83-91%

The CILCO method turns out to be the least accurate of all the methods examined, and it results in biased estimates under certain circumstances, as well (although the bias is not shown in the above table). In contrast, the other utility methods appear both theoretically sound and result in what staff considers acceptable levels of accuracy. Therefore, staff does not recommend immediate action by any of the utilities, with the exception of CILCO. It may be unrealistic to expect that CILCO's billing system could be replaced or overhauled "immediately." Hence, until its usage estimation routines are satisfactorily remedied, CILCO should take steps to avoid estimating bills. That is, CILCO should read as many meters as possible. Meanwhile, CILCO should immediately begin the process of rectifying its estimation procedure. In staff's opinion, the other utilities should examine ways to improve upon their methods in the normal course of business (for example, as billing systems are replaced, or as time permits within regular work schedules).

GAS METER ACCURACY TESTING

Commission Rules

The meter on a gas customer's service and the gas bill associated with it are the most direct connection the utility has with its customers. The Commission is charged with the responsibility of ensuring that utilities provide accurate metering to their customers. To meet this responsibility, the Commission adopted certain minimum standards in 83 Illinois Administrative Code 500 that all gas utilities must follow for testing the accuracy of their meters.

Code Part 500, Sections 180 through 215, contain the Commission's minimum standards that all natural gas utilities must use to operate their meter testing facilities and to test their in-service meters. Code Part 500 also requires authorized representatives of the Commission to check the utilities' compliance with the above requirements at least every three years. Below is a summary of the various Commission requirements and the actions the Commission takes to verify gas utility compliance.

The Commission requires all new or repaired gas meters, when installed, to operate no more than two percent slow and not more than one percent fast. The Commission allows customers concerned about the accuracy of their meters to request the utility to remove the meter and test its accuracy without charge, provided the meter in question was not previously tested within one year of the request. Customers also have the option of requesting a Commission referee test. A referee test requires a representative of the Commission to oversee the removal and testing of the customer's meter. However, the customer must make a written application and pay a prescribed fee to the Commission for this service. If the utility finds the accuracy of the meter to exceed two percent fast, then the utility reimburses the customer for the fee paid to the Commission.

The Commission requires all gas utilities to issue refunds to customers whose meters are more than four percent fast. The refund is based on the prior six months of readings from that meter. If the meter is more than four percent slow, then the utility has the option of rendering a bill to the customer for the amount not recorded for the prior six months.

Most gas companies employ sample testing to verify the accuracy of their in-service residential gas meters. Sample testing involves grouping meters in lots that consist of the same type, manufacturer, and size of meters, based upon their year of installation. After a meter lot has been in service for nine years, the utility removes and tests randomly selected meters from the lot each year. If a meter's accuracy is found to be more than three percent fast or slow, then the meter is considered to fail the accuracy test. If enough meters within the sample fail the accuracy test, then the utility must remove and test the entire meter lot. The Commission does not allow utilities that do not employ sample testing to keep a meter in-service longer than ten years without an accuracy test.

At the end of each year, the Commission verifies that each utility performs accuracy tests on all of the meters that required testing. On a three-year cycle, the Commission physically audits the operations of utility meter testing shops. During the audit, the Commission verifies all the meter testing shop equipment has up to date certification to national standards and that the utility is in compliance with all Commission testing and record keeping requirements. The Commission maintains its own meters to verify the accuracy of utility testing equipment. Utilities must maintain their testing equipment to within one-half of one percent accuracy.

Automated Meter Reading

The Commission has no rules governing the use of automated meter reading ("AMR") devices. However, the Commission is in the process of updating its standards to include specific requirements for utilities that are using more technologically advanced devices, such as AMR, to measure their customer's gas use.

AMR technology does not replace the existing meter or eliminate any error problems with the meter itself, instead it is merely a means to remotely obtain a meter reading. Historically, utility personnel read utility meters by physically going to each meter location and manually recording the reading. AMR eliminates the need for physical access to the meter by allowing for the extraction

of the metering data by electronic means to an off-site location. In recent years, the use of AMR technologies has increased within many utilities throughout the country. Some utilities have found that the use of AMR can cut costs and avoid on-site problems such as inaccessible meters, dogs, etc.

A review of the practices of Illinois gas companies shows a trend toward more AMR use. One utility, AmerenUE obtains over 90% of its meter readings via AMR technology and is in the process of converting its remaining meters. Peoples Gas also relies heavily upon AMR for its meter readings and obtains about 80% of them in that fashion. At the end of August 2001, Nicor Gas is initiating a pilot program to test the effectiveness of AMR within its system. This pilot involves installing the AMR device on 10,000 meters in Oak Park. Other Illinois gas utilities are using AMR devices only when they cannot gain access to the meter or a situation exists that could be harmful for their meter readers.

An Illinois gas company conducted tests on a large number of meters (operating an AMR meter and a non-AMR meter in parallel) to determine the accuracy of the AMR device it had chosen. These tests showed a very low error rate for the AMR devices (1/10 of 1%) with the problems encountered being improper initialization (setting the AMR device to the same reading as the meter) of the AMR device or a defective device (including battery failure). A review of the material provided by the Illinois gas utilities suggests that when installed properly AMR devices provide accurate meter readings. An improperly installed AMR device will usually not operate at all or, in the case of improper initialization, the meter reading is out of line with historical use, which allows the utility to quickly identify problem locations.

PUBLIC FORUMS

The Commission hosted public forums on August 21st in Springfield and August 23rd in Orland Park to allow for public comment on the billing practices of Illinois natural gas utilities.

At the Springfield public forum, Representative Maggie Crotty, 35th District, Oak Forest, stated that numerous calls from consumers about high gas bills and estimated meter readings led to her introducing HR 102. She mentioned that she was contacted by other state legislators with similar concerns prior to the introduction and subsequent passage of HR 102 during the Spring 2001 legislative session.

Prior to Rep. Crotty's remarks, a representative of Illinois Power's Customer Service Group discussed the company's gas purchasing and pricing practices, and IP's various programs to assist low-income customers on dealing with the increased gas prices.

The final speaker was the Director of Programs for the Illinois Community Action Association who discussed the problems many Illinois households have had paying their gas bills and the anxiety they have about the upcoming winter heating season.

The Orland Park public forum included a speaker from Nicor Gas who discussed upcoming gas prices, financial assistance programs, meter reading and meter accuracy. State Rep. Crotty reiterated her comments from the first forum concerning the genesis of HR 102 emphasizing that it was a bipartisan effort by the Legislature to ask the Commission to hold hearings to hear customer concerns over high gas bills, meter accuracy and use of estimated bills by gas utilities.

State Rep. Rosemary Kurtz, 64th District, Crystal Lake, testified to the high number of complaints by her constituents on the high gas prices of last winter. A representative of State Rep. Robert Ryan's office commented that the representative is committed to making sure consumers are being treated fairly by natural gas companies. The representative noted that these hearings and ICC investigation are a first step in assuring that customers received correct billing statements from their gas utilities.

A representative of the Illinois Attorney General's Office stated that their office has actively participated in gas related cases before the ICC on consumers' behalf and will continue to in the future.

An Assistant State's Attorney from the Cook County State's Attorney's Office proposed a number of legislative changes including the requirement for utility reporting on meter accuracy, customer complaint resolution and extended budget billing plans.

An informal question and answer period between the general public and utility representatives on natural gas issues followed the presentations at both the Springfield and Orland Park public forums.

A copy of the complete transcripts is available from the Chief Clerk's Office, Illinois Commerce Commission, 527 E. Capitol, Springfield, Illinois, 62701, telephone (217) 782-7434.

FINDINGS AND RECOMMENDATIONS

Nicor and Peoples Gas/and North Shore Gas both reported several thousand meters not having been read for in excess of 12 months. Staff has advised both utilities of the Commission's direction that they provide to Commission Staff within twenty-one days a plan for expeditiously reducing their backlog of unread meters to a reasonable level. Staff will provide the utility plans to the Commission when they are received.

With respect to utility estimation methods, Staff does not recommend immediate action by any of the utilities with the exception of CILCO. Staff has advised CILCO of the Commission's direction that it provide to Commission Staff within twenty-one days a plan to rectify its estimation procedure prior to the winter 2001-2002 heating season. Staff will advise the Commission when CILCO's plan has been received. Until such time as CILCO can implement revised estimation procedures, CILCO should take steps to avoid estimating bills by reading as many meters as possible.